10/019228

JC10 Rec'd PCT/PTO 28 DEC 2001

FORM PTO-1390 (REV. 11-2000) — U S DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371

ATTORNEY'S DOCKET NUMBER	
0104-0374P	
U S APPLICATION NO (If known, see 37 CFR 1 5)	
10/019228 NEW	

INTERNATIONAL APPLICATION NO.	INTERNATIONAL FILING DATE	PRIORITY DATE CLAIMED
PCT/SE00/01163	June 6, 2000	June 29, 1999

TITLE OF INVENTION

HOSE

APPLICANT(S) FOR DO/EO/US

RYHMAN, Morgan

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information.

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☒ This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39 (1).
4. ☒ The US has been elected by the expiration of 19 months from the priority date (Article 31).
5. ☒ A copy of the International Application as filed (35 U.S.C. 371(c)(2))
   a. ☒ is transmitted herewith (required only if not transmitted by the International Bureau). WO 01/01029
   b. ☐ has been transmitted by the International Bureau
   c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☐ An English language translation of the International Application as filed (35 U S.C. 371(c)(2)).
   a. ☐ is transmitted herewith.
   b. ☐ has been previously submitted under 35 U S.C. 154(d)(4)
7. ☒ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))
   a. ☐ are transmitted herewith (required only if not transmitted by the International Bureau).
   b. ☐ have been transmitted by the International Bureau.
   c. ☐ have not been made, however, the time limit for making such amendments has NOT expired
   d. ☒ have not been made and will not be made
8. ☐ An English language translation of the amendments to the claims under PCT Article 19 (35 U S C 371(c)(3))
9. ☐ An oath or declaration of the inventor(s) (35 U.S.C 371(c)(4)).
10. ☐ An English language translation of the annexes of the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 11. to 20. below concern document(s) or information included:

11. ☒ An Information Disclosure Statement under 37 CFR 1.97 and 1.98, Form PTO-1449(s), and International Search Report (PCT/ISA/210) with 5 cited document(s)
12. ☐ An assignment document for recording A separate cover sheet in compliance with 37 CFR 3.28 and 3 31 is included.
13. ☒ A FIRST preliminary amendment.
14. ☐ A SECOND or SUBSEQUENT preliminary amendment.
15. ☐ A substitute specification.
16. ☐ A change of power of attorney and/or address letter.
17. ☐ A computer-readable form of the sequence listing in accordance with PCT Rule 13ter.2 and 35 U.S.C. 1 821-1.825.
18. ☐ A second copy of the published international application under 35 U S C 154(d)(4)
19. ☐ A second copy of the English language translation of the international application under 35 U S.C 154(d)(4)
20. ☒ Other items or information.
    1.) International Preliminary Examination Report (PCT/IPEA/409)
    2.) Three (3) Sheets of Formal Darwings

U.S. APPLICATION NO (if known, see 37 CFR 1.5)	INTERNATIONAL APPLICATION NO	ATTORNEY'S DOCKET NUMBER
10/NEW 9228	PCT/SE00/01163	0104-0374P

21. ☒ The following fees are submitted	CALCULATIONS PTO USE ONLY	
BASIC NATIONAL FEE (37 CFR 1.492(a)(1)-(5): Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO. **$1,040.00**		
International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO **$890.00**		
International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO. **$740.00**		
International preliminary examination fee (37 CFR 1.482) paid to USPTO but all claims did not satisfy provisions of PCT Article 33(1)-(4) **$710.00**		
International preliminary examination fee (37 CFR 1.482) paid to USPTO and all claims satisfied provisions of PCT Article 33(1)-(4). **$100.00**		
ENTER APPROPRIATE BASIC FEE AMOUNT =	$ 1,040.00	
Surcharge of **$130.00** for furnishing the oath or declaration later than ☐ 20 ☒ 30 months from the earliest claimed priority date (37 CFR 1.492(e)).	$ 130.00	

CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE		
Total Claims	22 - 20 =	2	X $18.00	$ 36.00	
Independent Claims	1 - 3 =	0	X $84.00	$ 0.00	
MULTIPLE DEPENDENT CLAIM(S) (if applicable)		Yes	+ $280.00	$ 280.00	
TOTAL OF ABOVE CALCULATIONS =				$ 1,486.00	
☐ Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above are reduced by 1/2				$ 0.00	
SUBTOTAL =				$ 1,486.00	
Processing fee of **$130.00** for furnishing the English translation later than ☐20 ☐30 months from the earliest claimed priority date (37 CFR 1.492(f)). +				$ 0.00	
TOTAL NATIONAL FEE =				$ 1,486.00	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). **$40.00** per property +				$ 0.00	
TOTAL FEES ENCLOSED =				$ 1,486.00	
				Amount to be: refunded	$
				charged	$

a. ☒ A check in the amount of $ **1,486.00** to cover the above fees is enclosed.

b. ☐ Please charge my Deposit Account. No. _____ in the amount of $_____ to cover the above fees. A duplicate copy of this sheet is enclosed.

c. ☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 02-2448.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.

Send all correspondence to
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Date: December 28, 2001

By Joe McKinney Muncy
Joe McKinney Muncy, #32,334

/rem

PATENT
0104-0374P

IN THE U.S. PATENT AND TRADEMARK OFFICE

Applicant:	RYHMAN, Morgan		
Int'l. Appl. No.:	PCT/SE00/01163		
Appl. No.:	New	Group:	
Filed:	December 28, 2001	Examiner:	
For:	HOSE		

PRELIMINARY AMENDMENT

BOX PATENT APPLICATION
Assistant Commissioner for Patents
Washington, DC 20231

December 28, 2001

Sir:

The following Preliminary Amendments and Remarks are respectfully submitted in connection with the above-identified application.

AMENDMENTS

IN THE SPECIFICATION:

Please amend the specification as follows:

Before line 1, insert --This application is the national phase under 35 U.S.C. § 371 of PCT International Application No. PCT/SE00/01163 which has an International filing date of June 6, 2000, which designated the United States of America and was published in English.--

IN THE CLAIMS:

Please amend the claims as follows:

4. (Amended) A medium-carrying hose according to claim 1, c h a r a c t e r i s e d in
that the expansion portion is a groove in the hose casing when this is in an unexpanded state.

8. (Amended) A medium-carrying hose according to claim 5, c h a r a c t e r i s e d in
that the cross-sectional shape of the groove is different in different parts of the hose.

9. (Amended) A medium-carrying hose according to claim 1, c h a r a c t e r i s e d in
that the hose has at least two expansion portions, which are uniformly distributed along the circumference of the hose casing.

10. (Amended) A medium-carrying hose according to claim 1, c h a r a c t e r i s e d in
that the hose has four wall portions in addition to four expansion portions, which are alternatingly arranged along the circumference of the hose casing.

11. (Amended) A medium-carrying hose according to claim 1, c h a r a c t e r i s e d in
that the hose along its circumference is provided with an elastic material.

12. (Amended) A medium-carrying hose according to claim 1,

c h a r a c t e r i s e d in
that the hose along its inner circumference is provided with an elastic material.

16. (Amended) A method according to claim 13, c h a r a c t e r i s e d in that the form material is an elastic material, which extends along the circumference of the hose material.

18. (Amended) A method according to claim 13, c h a r a c t e r i s e d in that the form material is removed from the hose material in order to form the completed hose.

Docket No. 0104-0374P

REMARKS

The specification has been amended to provide a cross-reference to the previously filed International Application.

The claims have been amended to delete improper multiple dependencies.

Entry of the above amendments is earnestly solicited. An early and favorable first action on the merits is earnestly solicited.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By Joe McKinney Muncy
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KM/rem
0104-0374P

Attachment: VERSION WITH MARKINGS TO SHOW CHANGES MADE

Docket No. 0104-0374P

VERSION WITH MARKINGS TO SHOW CHANGES MADE

The specification has been amended to provide a cross-reference to the previously filed International Application.

IN THE CLAIMS:

The claims have been amended as follows:

4. (Amended) A medium-carrying hose according to [any one of claims 1-3] claim 1,
c h a r a c t e r i s e d in
that the expansion portion is a groove in the hose casing when this is in an unexpanded state.

8. (Amended) A medium-carrying hose according to [any one of claims 5-7] claim 5,
c h a r a c t e r i s e d in
that the cross-sectional shape of the groove is different in different parts of the hose.

9. (Amended) A medium-carrying hose according to [any one of claims 1-8] claim 1,
c h a r a c t e r i s e d in
that the hose has at least two expansion portions, which are uniformly distributed along the circumference of the hose casing.

10. (Amended) A medium-carrying hose according to [any one of claims 1-9] claim 1,
c h a r a c t e r i s e d in
that the hose has four wall portions in addition to four expansion portions, which are alternatingly arranged along the circumference of the hose casing.

11. (Amended) A medium-carrying hose according to [any one of claims 1-10] claim 1,
c h a r a c t e r i s e d in
that the hose along its circumference is provided with an elastic material.

12. (Amended) A medium-carrying hose according to [any one of claims 1-10] claim 1,
c h a r a c t e r i s e d in
that the hose along its inner circumference is provided with an elastic material.

16. (Amended) A method according to [any one of claims 13-15] claim 13,
c h a r a c t e r i s e d in
that the form material is an elastic material, which extends along the circumference of the hose material.

18. (Amended) A method according to [any one of claims 13-16] claim 13, c h a r a c t e r i s e d in that the form material is removed from the hose material in order to form the completed hose.

HOSE

Field of the Invention

The present invention relates to a medium-carrying hose, preferably for pressure medium and for use in e.g. engine compartments, the wall of the hose comprising at least one wall portion which is connected with at least one expansion portion to form a continuous hose casing. The circumference of the hose is variable between a minimum value, when the expansion portion is unexpanded, and a maximum value, when the expansion portion is maximally expanded.

The invention also relates to a method for manufacturing such a hose.

Background Art

Hoses of the type that is used in engine compartments are subjected to various effects of the surroundings. For instance, they can be subjected to pressure, from inside or from outside, or to relatively powerful vibrations as the engine is running. The space for hoses in motor compartments and the like is usually very limited. For an engine unit to be compact in terms of space, it is often necessary that the hoses be preformed and bent in given directions to fit between the other components of the engine. However there is one problem since the hose, when pressurised, tends to move or bulge in the engine compartment. The hose may then abut against other parts of the engine body, which for instance because of their temperature may damage the hose. This situation may also arise if the hose vibrates in the operation of the engine. Both pressurising and vibration besides cause a strain to the attachment of the hose in the engine unit.

There are today a plurality of hoses which have some kind of bellows structure at their ends, thereby reducing the vibrations in the attachment of the hose. However,

such bellow structures do not affect the motion of the various parts of the hose, which are still essentially free and can abut against neighbouring objects.

Such a hose is disclosed in e.g. EP 0 791 775, where flexible portions at the ends of the hose are combined with a rigid hose portion in the middle of the hose. Vibrations are absorbed in the longitudinal direction of the hose at the hose ends, but otherwise the hose is allowed to move freely.

Summary of the Invention

According to the invention the above problems are solved by a hose of the type mentioned by way of introduction, the expansion portion of the tube extending in the transverse and the longitudinal direction of the hose, the wall portions being displaced relative to each other in the transverse as well as the longitudinal direction of the hose as the circumference increases and the expansion portion expands.

By the expansion portion extending in the transverse and the longitudinal direction of the hose, the wall portions will be displaced in the transverse as well as the longitudinal direction when, for instance, pressurising the hose. The direction of motion of the portions during pressurising can thus be controlled, so that there is no risk of the hose touching other components in, for example, an engine unit. The expansion portion can extend first in one then in other direction, or diagonally across the transverse and the longitudinal direction of the hose. Also vibrations will be efficiently damped in a desirable manner when the vibrating motion of the wall portion is absorbed by the expansion portion. This means that the wall portion, and thus the hose, can be controlled in a desirable manner also in case of vibrations.

The wall and expansion portions may, if desirable, be differently formed in different parts along the hose in order to control, during expansion or vibration of the

hose, the direction of motion of the different parts in a desirable manner. The relationships of the wall and expansion portions can also differ in different parts along the hose.

In such a hose, which is preformed to have a certain extent in the longitudinal direction, as is often the case of hoses intended for engine compartments, the design of, and the relationships of, the wall and expansion portions in the hose casing in each part of the hose is preferably adapted to the preform of the hose in the respective parts. One and the same preformed hose can thus advantageously be provided with differently formed expansion and wall portions.

Preferably the expansion portion may consist of a groove in the hose casing when this is in an unexpanded state. Such a groove is relatively easy to form by means of a design in which the expansion portion is formed in unity with the wall portion. The expansion of the groove can besides be controlled with the aid of the shape of its cross-section.

Preferably the groove is helically turned seen in the longitudinal direction of the hose. The helical shape means directly that the expansion portion is oriented both in the transverse and in the longitudinal direction of the hose. Pressure and shocks in both directions are therefore efficiently absorbed by the hose.

The number of turns of the helical groove per unit of length of the hose may be varied to control the hose as desired. The groove may also have different direction of turning in different parts of the hose, or different cross-sectional shape in different parts of the hose. This results in many possibilities of variation.

Preferably the hose has one or more expansion portions, which are distributed along the circumference of the hose casing, for satisfactory distribution of the pressure and/or shock equalisation in each individual case.

The invention also relates to a method for manufacturing a hose according to the invention, in which the hose material is extruded. In addition to the hose material and together with this, a form material is extruded which is adapted to be a preform for the hose material for the desired configuration of expansion portions and wall portions. This preform serves to facilitate the process of extrusion. When the hose material, before blowing, has a relatively small diameter, there is a great risk that parts of the hose adhere to each other. This concerns in particular the expansion portions whose dimensions in the non-blown state are relatively small. A supporting form with expansion and wall portions is formed of the form material during extrusion and prevents problems in the forming of the hose material.

The form material is suitably arranged along the outer circumference of the hose material, which gives practical advantages in the method.

Preferably the form material is accumulated in the portions of the hose material which are intended to form expansion portions. These portions usually constitute formed portions such as grooves. The bulging shape which is necessary for the hose is produced by means of an elevated portion in the form material, thus a thicker portion of form material.

The form material can advantageously consist of an elastic material which extends along the circumference of the hose material. The form material of the completed hose will then be arranged along the circumference of the hose material and provides a smooth outer face for the hose. The elasticity of the material serves to make it possible for the expansion portions still to assume an unexpanded and an expanded state. A smooth outer face round the hose is advantageous since it is easier to keep clean than a hose with exposed expansion portions. The hose is then along its circumference provided with an elastic material.

Brief Description of the Drawings

Fig. 1 shows an embodiment of a hose according to the invention.

Fig. 2 is a cross-sectional view along line II-II of the hose in Fig. 1.

Fig. 3 is a cross-sectional view along line III-III of the hose in Fig. 1.

Fig. 4 shows a second embodiment of a hose according to the invention.

Fig. 5 is a cross-sectional view along line V-V of the hose in Fig. 4.

Fig. 6 is a cross-sectional view along line VI-VI of the hose in Fig. 4.

Fig. 7 shows a third embodiment of a hose according to the invention.

Fig. 8 is a cross-sectional view along line VII-VII of the hose in Fig. 7.

Fig. 9 is a cross-sectional view of one more embodiment of a hose according to the invention.

Description of Preferred Embodiments

Fig. 1 illustrates a preferred embodiment of a hose according to the invention. The hose is preformed with a plurality of bends 1, 2 and a straight central portion 3. The circumferential surface of the hose is formed with grooves 4 which extend along the hose. In the first bent part 1 of the hose, the grooves 4 are helically turned along the hose. In this portion 1, shocks as well as pressure can be absorbed in several directions. In the second straight portion 3 of the hose, the number of turns of the helix per unit of length is considerably smaller, i.e. so small that the groove 4 extends essentially along the hose. In the middle of the straight portion 3, the helical groove 4 changes direction round the hose in order to form in this new direction a helix having a larger number of turns per unit of length in the last, bent part 2 of the hose.

The cross-section of the hose is shown in Fig. 2. Here the cross-sectional shape of the grooves 4 is essentially rectangular. Four grooves 4 are uniformly distributed along the circumference of the hose with wall portions 5 therebetween. In one of the end portions of the hose, the hose is smooth and without grooves 4, as shown in Fig. 3.

Fig. 4 shows another embodiment of a hose according to the invention. The helical shape of the grooves 4 is similar to that of the hose in Fig. 1. The cross-sectional shape of the grooves 4, however, is different, which is evident from Fig. 5. Here the grooves 4 form a more acute angle to the wall portions 5 and between the walls of the groove. This design can, if it is made of the same material as in the embodiment in Fig. 1, absorb greater pressure and more powerful vibrations than in the embodiment in Fig. 1 owing to the greater expansibility of the grooves.

Figs 7-8 show a hose according to the invention, which is provided with an elastic form material along its circumference. In the manufacture of the hose by extrusion, the form material serves to give the hose the desired form with expansion and wall portions. In this embodiment an elastic form material is used, which is fixedly arranged on the hose and provides a smooth surface. The smooth surface can be advantageous to protect the hose from dirt. The elastic material, however, does not significantly prevent the relative movability between the portions. It is also possible to use a form material which is washed away after the hose is completed. Such a form material would then be used only in the extrusion and then be removed from the hose. The final result will then be a hose according to, for example, Figs 1-3.

It is also possible to arrange an electric material along the inner circumference of the hose. This yields the same advantages in terms of manufacture as those mentioned above, and also gives the hose a smooth inside,

which may be advantageous for the flow through the hose. The cross-section of such an embodiment of a hose according to the invention is shown in Fig. 9.

It goes without saying that many embodiments in addition to those described above are feasible. The shapes of the hoses and the grooves 4 can be varied in many ways. Instead of having grooves, the expansion portions can be designed in some other fashion, provided that efficient expansibility is obtained. For instance, the expansion portions 4 can be made of an elastic material which is put together with the wall portions 5, or of a weakened area which owing to its thinner wall thickness will be more elastic than the surrounding wall portions 5. By varying the above different parameters, the hose portions can thus be made to be displaced in the desired direction in pressurising or in case of vibrations. Of course, the preform of the hose can also be of a different design, according to the purpose of the hose. It should also be noted that a hose according to the invention, thanks to the expansion portions, can be made flexible. Also the direction of the flexibility is then dependent on the relationship of the expansion portions 4 and the wall portions 5.

Hoses according to the invention may also be provided with certain parts without any vibration-absorbing arrangements whatever.

Although the embodiments described above constitute hoses with a groove having a varying direction of turning in different parts of the hose, it is possible to have the same direction of turning along the entire hose. The cross-sectional shape may also be varied or constant along the hose, according to the requirements in the individual case. The hose can have one or more expansion portions, which can be uniformly or irregularly arranged.

It is also possible to have hoses where an elastic material is arranged both on the outer and on the inner circumference of the hose. The arrangement of elastic

material can be optimised for manufacture of the hose, for the flow therethrough as well as for cleaning. The effect of the grooves on the flow through the hose can optionally be used to control the flow.

ART 34 AMDT

AMENDED CLAIMS

1. A medium-carrying hose, preferably for pressure medium and for use in e.g. engine compartments, the wall of the hose comprising at least one wall portion (5) which is connected with at least one expansion portion (4) to form a continuous hose casing, so that the circumference of the hose is variable between a minimum value, when the expansion portion (4) is unexpanded, and a maximum value, when the expansion portion (4) is maximally expanded and said expanded portion (4) extends in the transverse and the longitudinal direction of the hose, the wall portions (5) being displaced relative to each other in the transverse as well as the longitudinal direction of the hose as the circumference increases and the expansion portion (4) expands,
c h a r a c t e r i s e d in
that the wall and expansion portions (5, 4) are differently formed in different parts (1, 2, 3) along the hose in order to control, during expansion or vibration of the hose, the direction of motion of the different parts (1, 2, 3) in a desirable manner.

2. A medium-carrying hose according to claim 1,
c h a r a c t e r i s e d in
that the relationships of the wall and expansion portions (5, 4) are different in different parts along the hose (1, 2, 3) in order to control, during expansion of the hose, the direction of motion of the different parts (1, 2, 3) in a desirable manner.

3. A medium-carrying hose according to claim 1 or 2,
c h a r a c t e r i s e d in
that the hose is preformed to have a certain extent in the longitudinal direction, and that the design of, and the relationships of, the wall and expansion portions (5, 4) in the hose casing in each part of the hose is adapted to the preform of the hose in the respective parts (1, 2, 3) of the hose.

4. A medium-carrying hose according to any one of claims 1-3,
c h a r a c t e r i s e d in
that the expansion portion is a groove in the hose casing when this is in an unexpanded state.

5. A medium-carrying hose according to claim 4,
c h a r a c t e r i s e d in
that the groove is helically turned seen in the longitudinal direction of the hose.

6. A medium-carrying hose according to claim 5,
c h a r a c t e r i s e d in
that the helical groove has a varying number of turns per unit of length of the hose.

7. A medium-carrying hose according to claim 5 or 6,
c h a r a c t e r i s e d in
that the helical groove has different direction of turning in different parts of the hose.

8. A medium-carrying hose according to any one of claims 5-7,
c h a r a c t e r i s e d in
that the cross-sectional shape of the groove is different in different parts of the hose.

9. A medium-carrying hose according to any one of claims 1-8,
c h a r a c t e r i s e d in
that the hose has at least two expansion portions, which are uniformly distributed along the circumference of the hose casing.

10. A medium-carrying hose according to any one of claims 1-9,
c h a r a c t e r i s e d in
that the hose has four wall portions in addition to four expansion portions, which are alternatingly arranged along the circumference of the hose casing.

11. A medium-carrying hose according to any one of claims 1-10,
c h a r a c t e r i s e d in
that the hose along its circumference is provided with an elastic material.

12. A medium-carrying hose according to any one of claims 1-10,
c h a r a c t e r i s e d in
that the hose along its inner circumference is provided with an elastic material.

13. A method for manufacturing a hose according to claim 1 by extruding the materials forming the hose,
c h a r a c t e r i s e d by
extruding, in addition to the hose material and together with this, a form material, which is adapted to be a preform for the hose material for the desired configuration of the expansion portions and wall portions.

14. A method according to claim 13,
c h a r a c t e r i s e d in
that the form material is arranged along the outer circumference of the hose material.

15. A method according to claim 13 or 14,
c h a r a c t e r i s e d in
that the form material is accumulated in the portions of the hose material which are adapted to form expansion portions.

16. A method according to any one of claims 13-15,
c h a r a c t e r i s e d in
that the form material is an elastic material, which extends along the circumference of the hose material.

17. A method according to claim 16,
c h a r a c t e r i s e d in
that the form material in the completed hose is arranged along the circumference of the hose material and provides a smooth outer face for the hose.

18. A method according to any one of claims 13-16, c h a r a c t e r i s e d in that the form material is removed from the hose material in order to form the completed hose.

19. A method according to claim 18, c h a r a c t e r i s e d in that the form material has the property that it can be washed away from the hose material.

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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International Bureau

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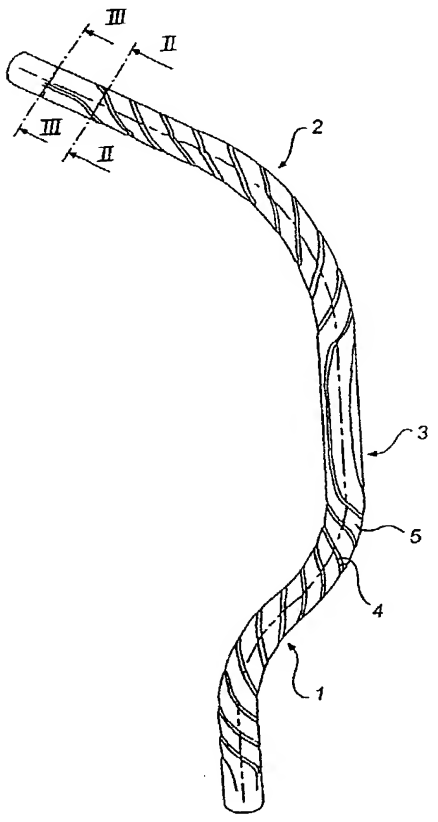
(81) Designated States *(national)*: AE, AG, AL, AM, AT, AT (utility model), AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, CZ (utility model), DE, DE (utility model), DK, DK (utility model), DM, DZ, EE, EE (utility model), ES, FI, FI (utility model), GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KR (utility model), KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK (utility model), SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

[Continued on next page]

(54) Title: HOSE



(57) Abstract: The present invention relates to a medium-carrying hose, preferably for pressure medium and for use in, for instance, an engine unit, the wall of the hose comprising at least one wall portion (5). The wall portion (5) is connected with at least one expansion portion (4) to form a continuous hose casing, so that the circumference of the hose is variable between a minimum value, when the expansion portion (4) is unexpanded, and a maximum value, when the expansion portion (4) is maximally expanded. The expansion portion (4) extends in the transverse and the longitudinal direction of the hose, the wall portions (5) being displaced relative to each other both in the transverse and in the longitudinal direction of the hose as the circumference increases and the expansion portion (4) expands. The invention also relates to a method for manufacturing such a hose.

WO 01/01029 A1

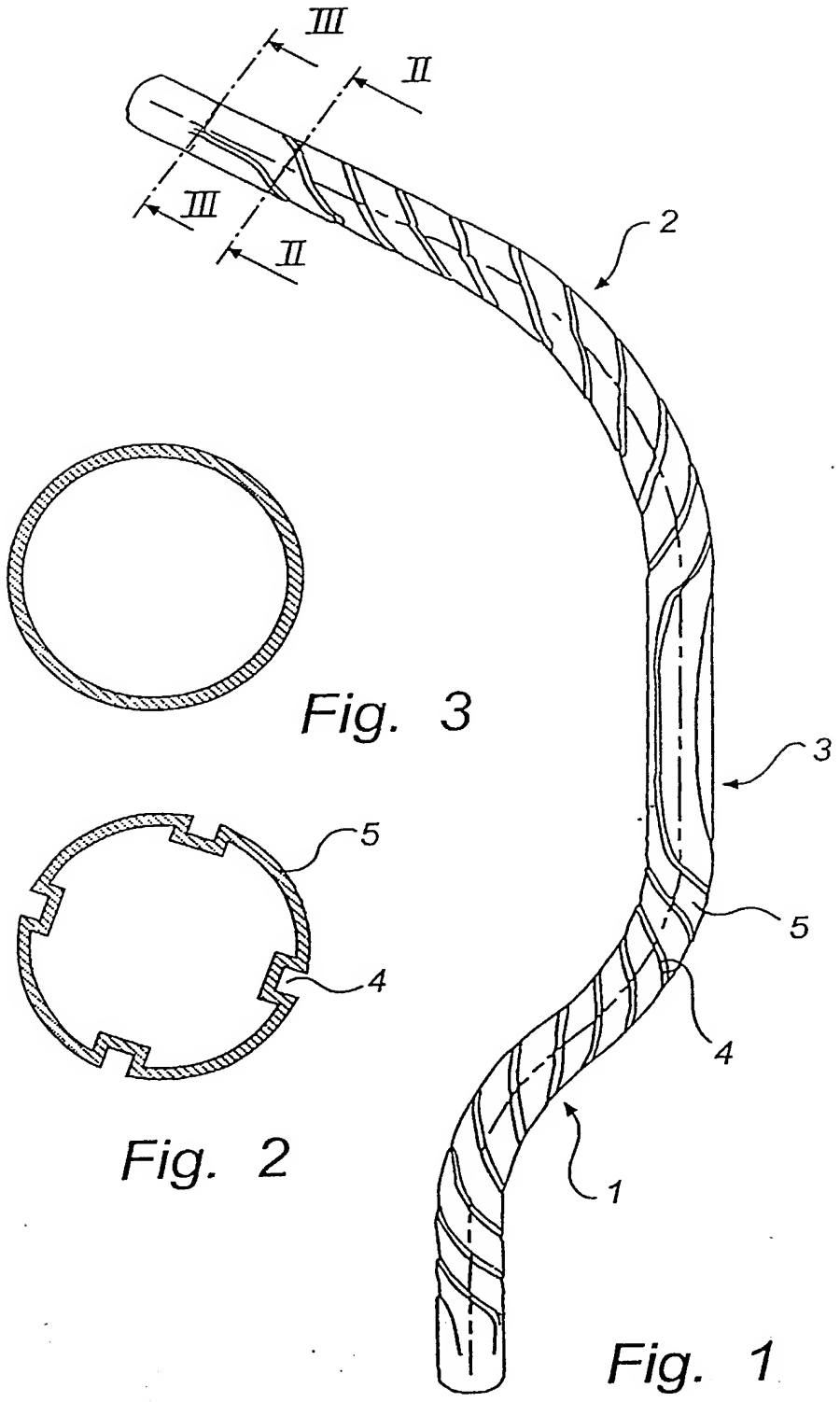


Fig. 1

Fig. 3

Fig. 2

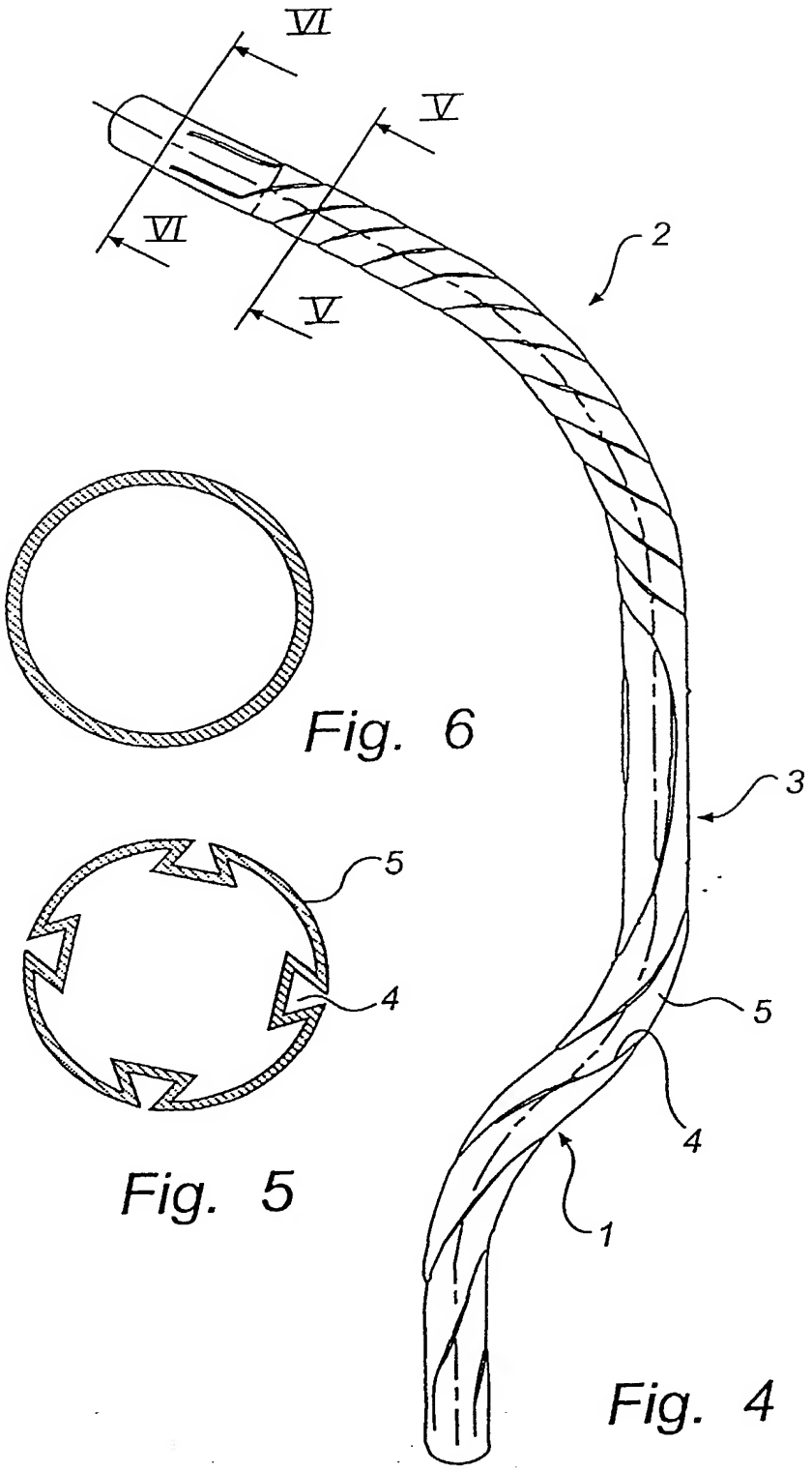


Fig. 6

Fig. 5

Fig. 4

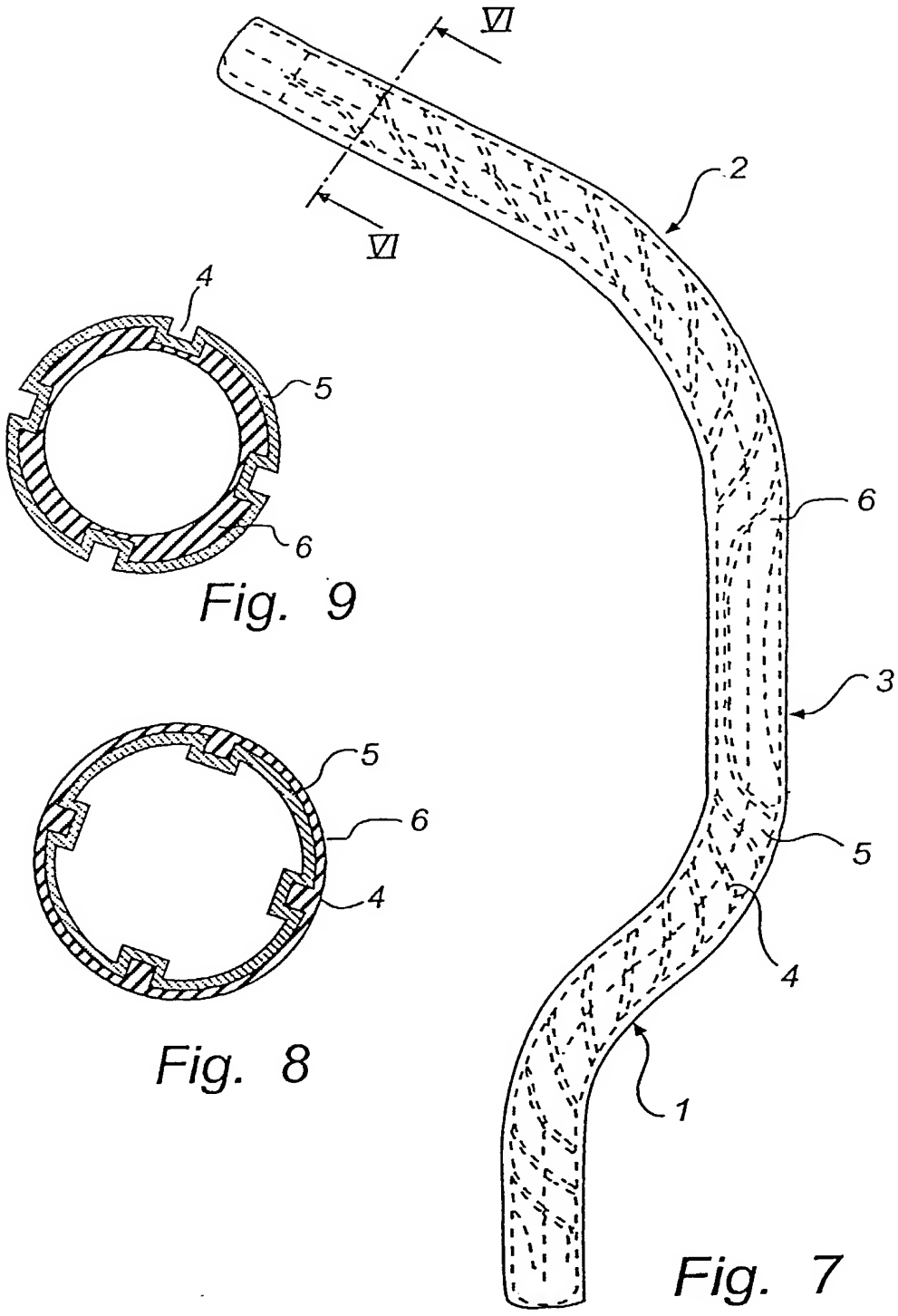


Fig. 9

Fig. 8

Fig. 7

Attorney Docket No. 0104-0374P

PLEASE NOTE: YOU MUST COMPLETE THE FOLLOWING

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COMBINED DECLARATION AND POWER OF ATTORNEY FOR PATENT AND DESIGN APPLICATIONS

As a below named inventor, I hereby declare that: my residence, post office address and citizenship are as stated next to my name; that I verily believe that I am the original, first and sole inventor (if only one inventor is named below) or an original, first and joint inventor (if plural inventors are named below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

Insert Title: HOSE

Fill in Appropriate Information - For Use Without Specification Attached:

the specification of which is attached hereto. If not attached hereto, the specification was filed on December 28, 2001 as United States Application Number _____; and amended on _____ (if applicable) and/or the specification was filed on June 6, 2000 as PCT International Application Number PCT/SE00/01163; and was amended under PCT Article 19 on July 4, 2001 (if applicable)

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, §1.56

I do not know and do not believe the same was ever known or used in the United States of America before my or our invention thereof, or patented or described in any printed publication in any country before my or our invention thereof or more than one year prior to this application, that the same was not in public use or on sale in the United States of America more than one year prior to this application, that the invention has not been patented or made the subject of an inventor's certificate issued before the date of this application in any country foreign to the United States of America on an application filed by me or my legal representative or assigns more than twelve months (six months for designs) prior to this application, and that no application for patent or inventor's certificate on this invention has been filed in any country foreign to the United States of America prior to this application by me or my legal representatives or assigns, except as follows.

I hereby claim foreign priority benefits under Title 35, United States Code, §119(a)-(d) of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed

Insert Priority Information: (if appropriate)

Prior Foreign Application(s)			Priority Claimed	
9902452-3 (Number)	Sweden (Country)	June 29, 1999 (Month/Day/Year Filed)	☒ Yes	☐ No
9903626-1 (Number)	Swden (Country)	October 8, 1999 (Month/Day/Year Filed)	☒ Yes	☐ No
(Number)	(Country)	(Month/Day/Year Filed)	☐ Yes	☐ No
(Number)	(Country)	(Month/Day/Year Filed)	☐ Yes	☐ No

I hereby claim the benefit under Title 35, United States Code, §119(e) of any United States provisional applications(s) listed below.

Insert Provisional Application(s): (if any)

(Application Number) (Filing Date)

(Application Number) (Filing Date)

All Foreign Applications, if any, for any Patent or Inventor's Certificate Filed More than 12 Months (6 Months for Designs) Prior to the Filing Date of This Application:

Insert Requested Information: (if appropriate)

Country	Application Number	Date of Filing (Month/Day/Year)

I hereby claim the benefit under Title 35, United States Code, §120 of any United States and/or PCT application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States and/or PCT application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose information which is material to the patentability as defined in Title 37, Code of Federal Regulations, §1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application

Insert Prior U.S. Application(s): (if any)

(Application Number) (Filing Date) (Status - patented, pending, abandoned)

(Application Number) (Filing Date) (Status - patented, pending, abandoned)

I hereby appoint the practitioners at **CUSTOMER NO. 2292** as my attorneys or agents to prosecute this application and/or an international application based on this application and to transact all business in the United States Patent and Trademark Office connected therewith and in connection with the resulting patent based on instructions received from the entity who first sent the application papers to the practitioners, unless the inventor(s) or assignee provides said practitioners with a written notice to the contrary:

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full Name of First or Sole Inventor: Insert Name of Inventor → Insert Date This Document is Signed →

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Residence (City, State & Country)	CITIZENSHIP

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Full Name of Sixth Inventor, if any: see above

GIVEN NAME/FAMILY NAME	INVENTOR'S SIGNATURE	DATE*

Residence (City, State & Country)	CITIZENSHIP

MAILING ADDRESS (Complete Street Address including City, State & Country)

*DATE OF SIGNATURE